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BEFORE THE ARIZONA CORPORATION COMMISSION

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ALL CORP COMMISSION  
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IN THE MATTER OF THE COMMISSION'S ) DOCKET NO. E-00000J-10-0202  
INQUIRY INTO AGGREGATED NET )  
METERING ("ANM") FOR ELECTRIC ) TUCSON ELECTRIC POWER  
SERVICES AND POSSIBLE MODIFICATION OF ) COMPANY AND UNS ELECTRIC,  
NET METERING RULES. ) INC.'S RESPONSES TO  
COMMISSION'S QUESTIONS

On August 24, 2010, the Commission requested interested parties to respond to questions in preparation for the next Workshop on Aggregated Net Metering to be held on September 1, 2010. UNS Electric, Inc. and Tucson Electric Power Company hereby respectfully respond to those questions.

RESPECTFULLY SUBMITTED this 1<sup>st</sup> day of September 2010.

TUCSON ELECTRIC POWER COMPANY and  
UNS ELECTRIC, INC.

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DOCKETED

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SEP 1 2010

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**TUCSON ELECTRIC POWER COMPANY's AND UNS ELECTRIC, INC.'s  
RESPONSES TO STAFF'S QUESTIONS IN PREPARATION FOR THE  
SEPTEMBER 1, 2010 AGGREGATED NET METERING WORKSHOP  
SEPTEMBER 1, 2010  
DOCKET NO. E-00000J-10-0202**

**1. Please define Aggregated Net Metering ("ANM").**

Net metering is defined in Arizona Administrative Code Rule 14-2-2301.11 as "service to an Electric Utility Customer under which electric energy generated by or on behalf of that Electric Utility Customer from a Net Metering Facility and delivered to the Utility's local distribution facilities may be used to offset electric energy provided by the Electric Utility to the Electric Utility Customer during the applicable billing period."

The Companies believe aggregated net metering refers to a single net metering facility whereby the credits will be applied to all metered accounts for a customer located on a single property or contiguous properties.

**2. What is your understanding of ANM? Compare and contrast with 1) Virtual Net Metering; 2) Community Net Energy Metering; and 3) Community Choice Aggregation concepts.**

Aggregated net metering refers to a single net metering facility whereby the credits will be applied to a customer's metered accounts located on a single property or contiguous properties (e.g., a single customer on contiguous properties). In contrast, Virtual Net Metering accumulates netting metering credits, which are then applied against the customer's accounts at a predetermined percentage (e.g., single customer regardless of geographic location). Community Net Energy Metering applies to a geographic area, including and limited to a unique community of interests, that is recognized as such by residents of such area and which, in addition to residential and undeveloped properties, may encompass commercial properties (e.g., many customers within predefined geographic location). Finally, Community Choice Aggregation is a system that permits cities and counties to aggregate the electric loads of residents, businesses, and municipal facilities to aid the purchase and sale of electrical energy (e.g., many customers within a defined community).

**3. Please address the following ANM policy design issues:**

**A. What customer classes should be eligible for ANM?**

While TEP does not support ANM, any ANM policy should be available to all classes and, at a minimum be, (1) designed to give reasonable assurance of cost based recovery; (2) cost beneficial to customers as a whole; (3) designed to avoid cross-subsidies between rate classes; and (4) equitable and not unduly discriminatory.

**B. What are the minimum and maximum system sizes that should be eligible for ANM?**

Costs must be considered when the Commission evaluates the size of any project, including ANM. Thus, the necessary system enhancements of any ANM system must be assessed to determine the costs of each individual system. One of TEP's primary objections to ANM is that it shifts those costs to other customer classes. Further, the minimum and maximum sizes eligible will be driven by system constraints, interconnection rules, and the economics of connecting each system.

**C. What metering and other equipment will need to be installed or modified to implement ANM?**

The equipment (and related costs) necessary to implement ANM may be extensive depending upon the scope of any proposed ANM policy. For example, it will be necessary to implement specialized meters and transformers, to purchase and maintain various pieces of software, to modify and upgrade the Companies' information services hardware as well as other costly measures to ensure safe and reliable electric service.

**D. Should all participating ANM accounts be within the same location as their generation source, or can ANM loads and generation sources be in separate geographic locations?**

All participating ANM accounts should only be allowed on contiguous properties within the same location as the generation source.

**E. Should all participating accounts be owned and operated by the same entity?**

Yes, all participating ANM accounts should be owned and operated by the same entity. Otherwise, one entity may be effectively generating and selling energy to another end-user customer, which would make the entity a public service corporation.

**F. How does a customer designate participating accounts, and how often can a customer change account designations?**

ANM customers would be designated by their participation in an ANM agreement. ANM agreements would ideally be for five years as this would be more cost effective. Because ANM accounts will require manual manipulation of the aggregation, the Companies believe that the ANM customer should be responsible for the costs associated with that process.

**G. How many accounts may a customer designate to participate in a single ANM system?**

At this point, the Companies do not know the total costs associated with multiple customer accounts with enough specificity to answer this question.

**H. If ANM credits will be allocated to multiple accounts, how does a utility determine how many ANM credits to allocate to each account?**

ANM credits would be allocated to multiple accounts using the simple formula of net generation kwh/number of accounts.

**I. Can participating accounts be on any retail tariff?**

No, even where customers cover their own interconnection and system enhancement costs related to participating in ANM, the Company's present retail rate structures are not designed to properly allocate cost recovery for things such as, but not limited to, back-up generation capacity. The current unbundled retail rates could be used for billing of transmission of the customer-supplied power across the Company's distribution system. However, if the generation utilizes the Federal Energy Regulatory Commission ("FERC") regulated transmission system, the OATT tariffs would need to be applied and recovered as well as other ancillary services and associated charges.

Additionally, the complexity of the calculation would be the limiting factor for different retail tariffs being applied to an aggregated generation output. Allocating the net kWh generation to both Time of Use and Standard Tariff accounts creates the complexity of determining On-Peak, Off-Peak, and Shoulder generation for a portion of the accounts and not the others.

**J. Should all participating accounts on a certain ANM generation source be on the same retail tariff?**

The Companies have significant concerns with allowing for the use of present retail rate structures as discussed in the response to 3.I. above. If retail rates were to be used in any manner, then the ANM policy should limit aggregation to service points in a single billing cycle for the same customer, with the same retail rate classification for that customer's accounts, to be netted against load on contiguous pieces of property.

Allowing multiple rate classes to be aggregated creates problems, including but not limited to:

- Difficulty in determining how to equitably blend demand-based rates with energy-based rates (i.e., how to handle the impact of generation on the level of demand);
- The inability to blend consumption for a single customer (i.e., two customers on the same property cannot blend consumption); and
- The need to allocate generation in a pre-determined manner equitable to all customers (i.e., allocate generation across rate tiers, time-of-use blocks, seasonal changes, and related pro-rations (future rate changes, et cetera).

**K. Can (or should) an ANM generator serve on-site electrical demand? If so, what would be allocated to other accounts, instantaneous excess generation or monthly excess generation?**

Per the definition of a 'net metering facility' as found in A.A.C. R-14-2-2302(13)(b), any net metering facility is required to supply part or all of the net metering customer's requirements for electricity. Any excess generation should only be allocated to other on-site, contiguous accounts for that same net metering customer.

**L. What charges, if any, should be assessed to customers enrolling in ANM?**

All charges associated with costs of ANM should be assessed and borne by the ANM participant(s). Those costs include, but are not limited to:

- interconnection costs;
- system enhancement costs;
- billing system changes costs;
- specialized metering costs;
- the costs of additional personnel needed to track usage, allocation, and reporting; and
- the costs of transmission, distribution, ancillary services, load stabilization, system losses, and back-up generation capacity.

**M. What effect would the implementation of an ANM policy have on existing Net Metering Rules?**

The implementation of any ANM policy would require modifications to the existing Net Metering Rules. This would involve a formal rulemaking process to amend the Net Metering Rules – which could be a time-consuming process that involves significant resources from both the utilities and the Commission. Therefore, the effects of an ANM Policy on the existing Net Metering Rules could be both significant and adverse.

**N. Will adoption of an ANM policy increase the installation of distributed renewable energy facilities in Arizona?**

No, implementing an ANM policy would not increase distributed generation ("DG") installations. An ANM policy may actually have an adverse effect on the thriving local DG market. As evidenced by recent Commission orders to reduce DG funding incentives as annual funding is exhausted, each category of DE (residential, small commercial, and large commercial) has been extremely successful. Utilities are consistently meeting and exceeding DG compliance targets under the Renewable Energy Standard. Since it is the availability of funding that limits the amount of DG that is installed, it is most likely that an ANM policy would be detrimental to the growth of DG. The funds used to support ANM projects will displace smaller DG projects that provide jobs to local installers and

may eliminate the viability of large commercial projects entirely.

**O. What distribution costs, if any, are incurred in an ANM program?**

Please see the Companies' response to 3.L above.

**P. How does the utility company aggregate all of the billing data for multiple "customers" in order to make ANM work? What are the anticipated IT costs?**

New custom modules would need to be created for the management of ANM generation locations, the linking of the multiple "customers," the aggregation of usage over multiple "customers," and the billing of credit allocations. These costs would include changes to the Customer Billing System (CC&B) and Meter Data Management System ITRON Enterprise Edition. Further, the Companies would need to employ the services of outside consultants and contractors to make these necessary modifications. Without further detail about any ANM program, the Companies cannot adequately estimate the associated information technology costs and timeframe.

**Q. Does ANM require "totalizing" of meters in order to work?**

ANM would not require "totalizing" of meters in order to work.

**4. What, if any, technical considerations should the ACC consider in determining whether to adopt ANM?**

**A. How would introduction of an ANM program impact load research, cost allocation and rate design?**

If the generation is not controlled by the Companies and cannot be considered 'firm' for resource planning purposes then the replacement capacity would need to be factored in to any analysis and the additional resources or firm capacity would need to be procured and available to meet the forecasted customer energy and demand needs.

From a cost allocation stand point, the non-firm nature of the customer supplied generation would provide little to no cost reduction of system generation capacity. This is because the customer generated power must be balanced and backed up. There would be little to no cost reductions associated with system delivery to the full requirements end use load of the ANM customer. Moreover, ANM would increase costs as it will be necessary to make system enhancements.

From a rate design standpoint, the fair and equitable recovery of back-up generation costs, system delivery costs, and FERC regulated transmission costs would need to be recovered through a "new" rate structure to ensure that all remaining full requirements customers are not unfairly burdened with costs that should be borne by the ANM customers. Moreover, fixed cost recovery should be shifted to non-volumetric rate elements because the utility will lose the energy sales from ANM.



Additionally, from TEP's perspective, any rate design change would have to be revenue neutral in order to avoid conflict with TEP's existing Settlement Agreement as approved by the Commission. Because the necessary rate design change cannot be revenue neutral, any such change will unfairly and inequitably burden all other customers as those cost recoveries will be reallocated in the next rate case.

**B. Would ANM change the way loads are metered?**

Yes, please see the Companies' response to 3.C.

**C. What are the potential impacts to utility system reliability and safety?**

Due to the size of the proposed projects in TEP's service territory, the TEP electric system would be required to provide load following with its generation resources to compensate for the intermittency of the sources.

TEP will need to be able to have real time data from the generation resources so that it is able to determine how much generation resources are active on its system. Without knowing the generation operating condition, TEP won't be able to properly calculate its reserve requirement. This requires the additional expense of installing a new communications system to provide data from each generator back to the TEP control operators.

TEP is required to carry regulating reserves to meet its disturbance control standard (DCS). This requires aggregation of all the generation resources. Without aggregation of all the generation resources, TEP would not carry the correct amount of regulating reserves if the generation resource is removed or output is modified.

Pre- and Post-fault conditions for Var consumption needs to be the same for the distributed generation resources. The generation resources need to be able to compensate for WECC Var requirements to prevent system issues.

The generation resources would also need to be able to ride through a frequency excursion event. Without ride-through capabilities TEP would be required to make up the generation capabilities if the distributed generation drops off during an event.

Distributed resources on the system that are not isolated during disturbances pose safety risks to the utility employees working to resolve disturbances. The resources would need to be marked for operators within the TEP graphical information system ("GIS") and field identified for field crews to identify that a backfeed source is present on the electrical system.

**5. Are there any additional technical or cost issues to be considered in relation to adopting an ANM policy?**

There may be issues in addition to those discussed above depending on the scope of any proposed ANM Policy. The Companies reserve the right to address additional issues as this docket evolves.

6. **What, if any, cost shifting issues should the ACC consider in determining whether to adopt ANM?**

Please see the Companies' response to 4.A above.

7. **What are the potential positive impacts of adopting an ANM policy?**

ANM projects, depending on size, may be able to benefit from economies of scale if larger ANM projects replace smaller DG installations. However, to the extent that an ANM policy will require additional funds rather than a portion of existing program funds, any economies of scale will be reduced if ANM generation displaces larger and less-expensive non-DG projects.

8. **What are the potential negative impacts of adopting an ANM policy?**

As discussed above, ANM is complicated and technically challenging. Any ANM policy must ensure that system operation and reliability will not be compromised. The vast majority of a utility's customers will be unable to take advantage of any ANM policy. That limitation leads to such concerns as inequitable treatment, discrimination, and improper subsidization between customers and customer classes. Given the limited applicability of ANM and the existence of other successful DG programs, there should be no financial incentives for ANM. Furthermore, adopting ANM has the following additional implications:

- changes to the existing Net Metering Rules;
- changes to the existing REST Rules;
- addressing the issue of utility cost recovery;
- cost-shifting and rate making consequences outside of a rate case;
- conflict with TEP's current Settlement Agreement as approved by the Commission;
- applicability of TEP's Direct Access Rules and Regulations;
- conflict with or application of federal rules via FERC and or the Public Utility Regulatory Policies Act; and
- numerous and costly upgrades due to the metering and billing requirements of ANM.

9. **Should the ACC adopt ANM? Why or why not?**

As discussed herein, the problems and increased costs associated with ANM lead to the conclusion that ANM is not in the public interest.

**10. If the ACC decides to adopt ANM, should it be implemented on a trial or pilot basis?**

If ANM is adopted, the Companies believe that it should only be on a trial basis with the following caveats (including, but not limited to):

- revenue neutrality, either through proper rate design, a lost revenue recovery mechanism, or through a Commission order allowing both the deferral and recovery of lost revenue;
- a fair and equitable cost recovery structure;
- insurance that the ANM customer is responsible for interconnection and system enhancement cost; and
- that the ANM customer is responsible for compliance with all safety, security and regulatory requirements related to generating and providing electric energy to the Companies' systems.